

What is claimed is:

1. An ultrasonic inspection apparatus for non-destructive inspection of a workpiece (30), said ultrasonic inspection apparatus having:
 - a transmit/receive probe (26) comprising a couplant (28) for coupling to an entrance surface (32) of the workpiece (30),
 - a transmitter (36) connected to said probe and generating transmit pulses which it then delivers to said probe,
 - a receiver (38) connected to said probe and
 - a monitor (22) that is connected to said receiver (38) for displaying electric echo signals (40, 41, 42, 43) received by said receiver (38),
said probe emitting ultrasonic pulses that, on the one side, are reflected at the entrance surface (32) back to the probe and on the other side penetrate the workpiece (30) where they are reflected at least once at a backwall (34) of the workpiece (30), characterized in that said ultrasonic inspection apparatus has on the monitor (22), in addition to the display displaying the received electric echo signals (40, 41, 42, 43), a bar display (24) showing at least one signal value in real time, with said signal being derived from one of the following echo signals (40, 41, 42, 43): the entrance echo (40) reflected at the entrance surface (32), at least one backwall echo (41) and/or one signal calculated from a plurality of backwall echoes (41, 42, 43).
2. The ultrasonic inspection apparatus of claim 1, characterized in that the workpiece (30) comprises flaws, that the ultrasonic pulses are also reflected at the flaws and that the bar display (24) displays a selected flaw echo (50) and/or a signal is calculated from echo signals (50) of a plurality of flaws and is displayed on the bar display (24).
3. The ultrasonic inspection apparatus of claim 1, characterized in that the bar display (24) permitting to display in colours and that at least two signal values are shown one above the other in different colours on the bar display (24).
4. The ultrasonic inspection apparatus of claim 1, characterized in that the bar display (24) is disposed immediately beside the monitor (22) or that a stripe-shaped area, preferably a border area of the monitor (22) is used as the bar display (24).

5. The ultrasonic inspection apparatus of claim 1, characterized in that the bar display (24) is disposed so as to extend transversely with respect to a time axis of the monitor (22).
6. The ultrasonic inspection apparatus of claim 1, characterized in that the bar display (24) has a length that equals a transverse dimension of the monitor (22), that more specifically equals the dimension of the monitor (22) in the direction of the voltage values displayed.
7. The ultrasonic inspection apparatus of claim 1, characterized in that the bar display (24) is realized by a colour LCD array.
8. The ultrasonic inspection apparatus of claim 1, characterized in that the workpiece (30) is composed of at least two sheet metal plates that are joined together by a spot weld joint and that the quality of the spot weld joint is to be determined.